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PATENT



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: Clinton S. Hartmann

Serial No.: 10/062,894

Filed: January 30, 2002

For: MODULATION BY COMBINED MULTI-PULSE PER GROUP WITH
SIMULTANEOUS PHASE AND TIME SHIFT KEYING AND
METHOD OF USING THE SAME

Grp./A.U.: 2634

Examiner: Ha, Dac V.

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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ATTENTION: Board of Patent Appeals and Interferences

Sirs:

APPEAL BRIEF UNDER 37 C.F.R. §41.37

This is an appeal from a Final Rejection dated May 6, 2004 of Claims 1-20. The Appellant submits this Brief with the statutory fee of \$250.00 for a small entity as set forth in 37 C.F.R. §41.20(b)(2), and hereby authorizes the Commissioner to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 08-2395.

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This Brief contains these items under the following headings, and in the order set forth below in accordance with 37 C.F.R. §41.37(c)(1):

- I. REAL PARTY IN INTEREST
- II. RELATED APPEALS AND INTERFERENCES
- III. STATUS OF CLAIMS
- IV. STATUS OF AMENDMENTS
- V. SUMMARY OF CLAIMED SUBJECT MATTER
- VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL
- VII. APPELLANT'S ARGUMENTS
- VIII. APPENDIX A - CLAIMS
- IX. APPENDIX B - EVIDENCE

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is the Assignee, RF SAW Components, Incorporated.

II. RELATED APPEALS AND INTERFERENCES

No other appeals or interferences will directly affect, be directly affected by, or have a bearing on the Board's decision in this appeal.

III. STATUS OF THE CLAIMS

Claims 1-20 are pending in this application. Claims 1-3 and 11-13 have been rejected under 35 U.S.C. §102(b) and Claims 4-10 and 14-20 have been rejected under 35 U.S.C. §103(a). Each of the pending claims is being appealed.

IV. STATUS OF THE AMENDMENTS

The present Application was filed on January 30, 2002. The Appellant filed a first Amendment on February 10, 2004, in response to a first Examiner's Action mailed November 10, 2003. The Examiner subsequently issued a Final Rejection on May 6, 2004, in response to which the Appellant filed a request for reconsideration on July 6, 2004. The Examiner responded to the Appellant's request for reconsideration in an Advisory Action mailed on September 7, 2004. The Appellant then filed a Notice of Appeal.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention is directed, in general, to a propagated signal and a method of producing a propagated signal. Independent Claim 1 is directed, in one embodiment, to a propagated signal of a time period divided into a group of time slots each having a unique phase/time position and multiple pulses distributed among the time slots encoding a data element by such unique phase/time position. (Page 16, para. 0036 and 0037; Page 17, para. 0038).

Independent Claim 11 is directed, in one embodiment, to a method of propagated a signal by designating a time period divided into a group of time slots each having a unique phase/time position and distributing multiple pulses among the time slots to encode a data element by the unique phase/time position. (Page 22, para. 0047).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The first issue presented for consideration in this appeal is whether Claims 1-3 and 11-13, as rejected by the Examiner, are anticipated in accordance with 35 U.S.C. §102(b) by U.S. Patent No. 5,684,871 to Devon *et al.* (Devon). The second issue presented for consideration in this appeal is whether Claims 4-10 and 14-20, as rejected by the Examiner, are patentably nonobvious in accordance with 35 U.S.C. §103(a) over Devon.

VII. APPELLANT'S ARGUMENT

The inventions set forth in independent Claims 1-20 and their respective dependent claims are neither anticipated by nor obvious over the reference on which the Examiner relies.

A. Rejection of Claims 1-3 and 11-13 under 35 U.S.C. 102(b) as anticipated by Devon

Devon describes a system for encoding symbols based on the position of a signal characteristic, such as frequency, amplitude or phase, within a pulse position modulation frame. (Col. 2, lines 53-63) The location of the signal characteristic in the pulse position frame of time slots or spaces is used to encode a data symbol. A sync pulse signal transmitted before the start of each frame identifies the frame or group of slots within which the data bearing signal characteristic is located and also can be used to code or encode data based on the frequency of the sync pulse signal. (Col. 9, lines 49-63). In short, Devon describes a system that uses only one slot out of a frame of slots to encode data.

In response to Appellant's request for reconsideration of the Final Rejection, the Examiner states that Appellant has not claimed a frame divided into windows that is further divided into time slots. He also notes that limitations from the specification are not read into the claims. Appellant submits that the claims are clear when read in view of the specification. All the discussion in the specification deals with encoding data within a single time period (or frame) divided into time slots used to encode data. There is no need to read a limitation from the specification into the claims, because the claims and specification are talking about the same thing; that is, a time period divided into a group of time slots each having a unique phase/time position and multiple pulses distributed among these time slots to encode a data element by such unique phase/time positions.

The Examiner also states that the term "phase/time" is only interpreted as either time or phase. The Appellant again disagrees. The specification is clear that a pulse in a specific time slot is distinguishable from a pulse in another slot by both time and phase. This claim interpretation by the Examiner is without foundation and contrary to the specification.

Devon describes a single data pulse located within a group of time slots that are transmitted after an identifying sync pulse. Only a single data pulse is located within a number of time slots, even if the sync pulse also carries information by virtue of having one of several different signal characteristics. The Appellant submits that those of ordinary skill in the pertinent art will not view the sync pulse as being within the group of data bearing time slots. The sync pulse, as described in Devon, is always in the same place and is viewed separately from the time slots that carry data. Thus, because Devon only provides for one pulse per group of pulses, it does not anticipate encoding data using multiple pulses distributed among a group of time slots and is not, as such, an anticipating reference with respect to independent Claims 1 and 11. Because Claims 2 and 3 are dependent on Claim 1 and Claims 12 and 13 are dependent upon Claim 11, Devon also cannot be an anticipating reference for Claims 2, 3, 12 and 13.

B. Rejection of Claims 4-10 and 14-20 under 35 U.S.C. §103(a) over Devon


As explained above, Devon does not disclose encoding a data element using multiple pulses distributed among a group of time slots. Devon provides for a single data pulse transmitted after a positional non-varying sync pulse. Because Devon only provides for one signal characteristic per group of pulses, it does not teach or suggest that multiple pulses can be distributed among a group of time slots to encode data. Thus, Devon fails to teach or suggest the invention recited in independent Claims 1 and 11 and their dependent claims, when considered as a whole. Claims 4-10 and 14-20 are therefore not obvious in view of Devon.

For the reasons set forth above, the Claims on appeal are not anticipated by Devon. Further, the Claims are patentably nonobvious over Devon. Accordingly, the Appellant respectfully requests

that the Board of Patent Appeals and Interferences to reverse the Examiner's Final Rejection of all of the Appellant's pending claims.

Respectfully submitted,

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Dated: June 6, 2005

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VIII. APPENDIX A - CLAIMS

1. A propagated signal, comprising:
a time period divided into a group of time slots each having a unique phase/time position;
and
multiple pulses distributed among said time slots encoding a data element by said unique phase/time position.
2. The propagated signal as recited in Claim 1 wherein said data element is ascertainable by mapping.
3. The propagated signal as recited in Claim 1 wherein said time slots in said group are adjacent.
4. The propagated signal as recited in Claim 1 wherein said time slots in said group are not adjacent.
5. The propagated signal as recited in Claim 1 wherein said time slots have a non-uniform spacing.
6. The propagated signal as recited in Claim 1 wherein said data element is at least fifteen bits long.

7. The propagated signal as recited in Claim 1 wherein said data element is selected from the group consisting of:

- a header;
- an error detection message;
- a synchronization element; and
- a data message.

8. The propagated signal as recited in Claim 1 further comprising a plurality of said time periods.

9. The propagated signal as recited in Claim 8 wherein said groups have differing numbers of multiple pulses.

10. The propagated signal as recited in Claim 8 wherein said number of time slots vary in said time periods.

11. A method of propagating a signal, comprising:
designating a time period divided into a group of time slots each having a unique phase/time position; and
distributing multiple pulses among said time slots to encode a data element by said unique phase/time position.

12. The method as recited in Claim 11 wherein said data element is ascertainable by mapping.

13. The method as recited in Claim 11 wherein said time slots in said group are adjacent.

14. The method as recited in Claim 11 wherein said time slots in said group are not adjacent.

15. The method as recited in Claim 11 wherein said time slots have a non-uniform spacing.

16. The method as recited in Claim 11 wherein said data element is at least fifteen bits long.

17. The method as recited in Claim 11 wherein said data element is selected from the group consisting of:

- a header;
- an error detection message;
- a synchronization element; and
- a data message.

18. The method as recited in Claim 11 further comprising a plurality of said time periods.

19. The method as recited in Claim 18 wherein said groups have differing numbers of multiple pulses.

20. The method as recited in Claim 18 wherein said number of time slots vary in said time periods.

IX. APPENDIX B - EVIDENCE

The evidence in this appendix is Devon, which was entered in the record by the Examiner with the Examiner's Office Action mailed on November 10, 2002.